

CLAIMS

What is claimed is:

- 5 1. A differential amplifier, comprising:
 - a pair of transistors;
 - first transformer that is arranged to provide a pair of mutually coupled inductors for the transistors.
- 10 2. The differential amplifier of claim 1, wherein the mutually coupled inductors are arranged to bias the transistors.
- 15 3. The differential amplifier of claim 1, wherein the mutually coupled inductors are arranged to provide output impedance matching for the differential amplifier.
- 20 4. The differential amplifier of claim 1, wherein the mutually coupled inductors are arranged to provide input impedance matching for the differential amplifier.
- 25 5. The differential amplifier of claim 1, wherein the mutually coupled inductors are arranged to provide noise control for the differential amplifier.
- 30 6. The differential amplifier of claim 1, wherein the mutually coupled inductors are arranged to increase common mode rejection in the differential amplifier.

7. The differential amplifier of claim 1, wherein
the first transformer is coupled in series with a
source of each transistor.

5 8. The differential amplifier of claim 1, wherein
the first transformer is coupled in series with a
first terminal of each transistor.

10 9. The differential amplifier of claim 8, further
comprising a second transformer that is coupled in
series with a second terminal of each transistor.

15 10. The differential amplifier of claim 9, wherein
the mutually coupled inductors of the first
transformer are arranged to bias the transistors and
to provide output impedance matching and wherein the
mutually coupled inductors of the second transformer
are arranged to bias the transistors and to provide
input impedance matching and noise control.

20 11. A method for providing a differential amplifier,
comprising the step of coupling a pair of mutually
coupled inductors of a first transformer to a pair of
transistors of the differential amplifier.

25 12. The method of claim 11, wherein the step of
coupling a pair of mutually coupled inductors
comprises the step of arranging the mutually coupled
inductors to bias the transistors.

30 13. The method of claim 11, wherein the step of
coupling a pair of mutually coupled inductors
comprises the step of arranging the mutually coupled

inductors to provide output impedance matching for the differential amplifier.

14. The method of claim 11, wherein the step of
5 coupling a pair of mutually coupled inductors comprises the step of arranging the mutually coupled inductors to provide input impedance matching for the differential amplifier.

10 15. The method of claim 11, wherein the step of coupling a pair of mutually coupled inductors comprises the step of arranging the mutually coupled inductors to provide noise control for the differential amplifier.

15 16. The method of claim 11, wherein the step of coupling a pair of mutually coupled inductors comprises the step of arranging the mutually coupled inductors to increase common mode rejection in the
20 differential amplifier.

17. The method of claim 11, wherein the step of coupling a pair of mutually coupled inductors comprises the step of coupling the first transformer
25 in series with a source of each transistor.

18. The method of claim 11, wherein the step of coupling a pair of mutually coupled inductors comprises the step of coupling the first transformer
30 in series with a first terminal of each transistor.

19. The method of claim 18, further comprising the step of coupling a second transformer in series with

a second terminal of each transistor.

20. The differential amplifier of claim 19, wherein
the mutually coupled inductors of the first
5 transformer are arranged to bias the transistors and
to provide output impedance matching and wherein the
mutually coupled inductors of the second transformer
are arranged to bias the transistors and to provide
input impedance matching and noise control.